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(54) Title: SYNERGISTICALLY ACTING HERBICIDAL MIXTURES

$$R^{1}$$

$$R^{2}$$

$$R^{3}$$

$$R^{3}$$

$$R^{4}$$

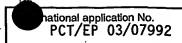
$$R^{3}$$

(57) Abstract: A synergistic herbicidal mixture comprising A) at least one 3-heterocyclyl-substituted benzoyl derivative of the formula (I) in which the variables have the following meanings: R¹, R³ are halogen, alkyl, haloalkyl, alkoxy, haloalkoxy, alkylthio, alkylsulfinyl or alkylsulfonyl; R² is a optionally substituted heterocyclic radical se-lected from the group: isoxazol-3-yl, isoxazol-4-yl, isoxazol-5-yl, 4,5-dihydroisoxazol-3-yl, 4,5-dihydro-isoxazol-4-yl and 4,5-dihydroisoxazol-5-yl; R⁴ is hydrogen, halogen or alkyl; R⁵ is alkyl; R⁶ is hydrogen or alkyl; or one of its environmentally compatible salts; and B) the compound of formula (II) or one of its environmentally compatible salts; and C) at least one further herbicidal compound from the group of the acetolactate synthase inhibitors (ALS), lipid biosynthesis inhibitors and photosynthesis inhibitors; in a synergistically effective amount. Compositions comprising these mixtures, processes for the prepa-ration of these compositions, and their use for controlling undesired plants.



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A. CLASSIFICATION OF SUBJECT MATTER TO THE PROPERTY OF THE PRO	TER					
According to International Patent Classific	otion (IBC) or to both notional alcoration	ation and IPC				
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CHEM ABS Data, EPO-Int	ernal, WPI Data					
C. DOCUMENTS CONSIDERED TO BE	RELEVANT			·		
Category Citation of document, with in						
	1999 (1999–12–23)			1–30		
page 1, line	1 -page 3, line 25					
page 4, line	4 - line 22 3 - line 14 38 -page 6, line 13	,	·			
page 5, line	38 -page 6, line 13					
table 1	e 29 - line 35					
page 48-49;	page 19, line 29 - line 35 page 48-49; table 2					
tables 11-1	7,19-23,46-51,58-70, 	76,83,84				
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Further documents are listed in the	ne continuation of box C.	X Patent fami	ly members are listed	l in annex.		
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Box I	Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)
This Inte	rmational Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1.	Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2.	Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
з. 🔲	Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II	Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)
This Inte	ernational Searching Authority found multiple inventions in this international application, as follows:
	see additional sheet
1. X	As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.	As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.	As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.	No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
Remarl	The additional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9 (partially), 10-12, 21-22, 25-30(partially)

A synergistic herbicidal mixture comprising at least one 3-heterocyclyl-substituted benzoyl derivative of the formula (I), nicosulfuron and an acetolactate synthase inhibitor

2. Claims: 1-9 (partially), 13-15, 23-30 (partially)

A synergistic herbicidal mixture comprising at least one 3-heterocyclyl-substituted benzoyl derivative of the formula (I), nicosulfuron and a lipid biosynthesis inhibitor

3. Claims: 1-9 (partially), 16-20, 25-30 (partially)

A synergistic herbicidal mixture comprising at least one 3-heterocyclyl-substituted benzoyl derivative of the formula (I), nicosulfuron and a photosynthesis inhibitor



Internal Application No PC17EP 03/07992

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Patent document cited in search report	Publication date		Patent family member(s)	Publication date
WO 9965314	A 23-12-1999	AT	241271 T	15-06-2003
		AU	758799 B2	27-03-2003
	•	AU	4608999 A	05-01-2000
		BG	105144 A	31-12-2001
		BR	9911313 A	13-03-2001
		CA	2334955 A1	23-12-1999
		CN	1305346 T	25-07-2001
		DE	59905756 D1	03-07-2003
		DK	1087664 T3	22-09-2003
		EE	200000754 A	15-04-2002
		WO	9965314 A1	23-12-1999
	_	· EP	1087664 A1	04-04-2001
	•	ΗÜ	0103418 A2	28-01-2002
		JP	2002518303 T	25-06-2002
		NO	20006315 A	12-12-2000
		NZ	508546 A	28-11-2003 .
		PL	345016 A1	19-11-2001
		PT	1087664 T	31-10-2003
		SI	1087664 T1	31-10-2003
		SK	18122000 A3	06-08-2001
		TR	200003752 T2	21-06-2001
		US	2003203819 A1	30-10-2003
		US	6534444 B1	18-03-2003
		ZA	200100395 A	15-01-2002